# WEST Search History

**DATE:** Saturday, March 15, 2003

| Set Name | Query | Hit Count | Set Name |
|---|---|---|---|
| side by side | | | result set |
| | *DB=USPT; PLUR=YES; OP=ADJ* | | |
| L9 | l5 and (real$time or real time) | 24 | L9 |
| L8 | l5 and (real$time or real tile) | 13 | L8 |
| L7 | 5652917.pn. | 1 | L7 |
| L6 | l5 near15 modem | 0 | L6 |
| L5 | status port near10 ((communication or data) adj port) | 45 | L5 |
| L4 | 4349870[uref] | 55 | L4 |
| L3 | L1.ti,ab. | 17 | L3 |
| L2 | L1 near10 (status) | 2 | L2 |
| L1 | (multi$1function or multiple function) near3 port | 105 | L1 |

END OF SEARCH HISTORY

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DOCUMENT-IDENTIFIER: US 5790958 A
TITLE: Radio reception system for general purpose computer

Detailed Description Text (16):
Communication between the microcontroller 80 and the host personal
computer, or other display/processing system, is accomplished via a
status port having corresponding signal lines 104, and a data port
having corresponding signal lines 106. Depending upon the
particular microcontroller 80 selected, the data and status ports
may be on-board, or implemented with an external I/O device. In a
preferred embodiment, the data and status ports are 8-bit registers
and the signal lines 104 and 106 each contain a corresponding 8
individual signal paths. The status signal lines 104 serve to
identify the current transfer operation performed by the
microcontroller 80, and the data signal lines 106 transfer the data
from the microcontroller 80 to the host computer. The data and
status information from the corresponding ports is decoded by the
address decoding circuitry 90 and presented to the bus 60 for
transfer to the host computer.

Detailed Description Text (41):
In a preferred embodiment of the present invention, the
microcontroller 80 may be instructed by the application software 97
to operate in either the interrupt mode or the polling mode. When
the polling mode is initially selected by the application software,
a polling-mode flag is set through the I.sup.2 C bus which tells
the microprocessor 80 to write the status information to the data
port and the status port. The microcontroller 80 waits for
instructions from the I.sup.2 C bus master before placing data on
the data and status ports.

output only port, or is an eight bit bi-directional communications port with the proper software and hardware. The control port, besides its printer control duties, is nominally a four bit output port, and the status port is nominally a five bit input port.

Detailed Description Text (16):
FIG. 4 is a block diagram of an external communications device for transmitting and receiving compressed digital audio information between the device and a host computer. The data port lines 12, status port lines 14, and control port lines 16 connect to a digital interface 20 of the external communications device. The digital interface consists of: (1) a data interface circuit 22 that receives signals from the data port lines 12; (2) a status transmit circuit 24 that sends signals on the status port lines 14; (3) and a control receive circuit 26 that receives signals from the control port lines 16.

Detailed Description Text (38):
The process for the host computer to receive digital information through its standard parallel printer port is very similar to the transmit process. Instead of the host computer receiving the digital information through the data port, however, the preferred embodiment receives the information through the status port. As previously discussed, not all computers have bi-directional data ports. Receiving digital information through the status port allows the invention to operate on a wider variety of computers without the need to modify the hardware of the host computer's parallel printer port. This method of receiving digital information is suitable for recording digital audio for several reasons. One, recording digital audio is usually not as time critical as the playback function. This means that the record function can utilize more of the host computer's CPU time. And second, the digital audio information is in a four bit format, and that makes the five bit input capability of the status port suitable for transferring the information. If the application is something other than giving computers digital audio capability like video information for example, then using the status port for receiving the digital information is not satisfactory. One skilled in the art, armed with the knowledge of this disclosure, can modify the software and hardware of this invention so that the external communication device transmits information to the host computer through the host computer's data port.

CLAIMS:

21. An apparatus that transfers digital information through a parallel printer interface, comprising:

a parallel printer interface that comprises a data port interface and a status port interface wherein said data port interface comprises a plurality of wires and said status port interface comprises a plurality of wires; and

a strobe that comprises one wire of said data port interface, said strobe clocks digital information transferred through said parallel printer interface..Iaddend..Iadd.

24. A method that transfers digital information through a parallel printer interface, comprising:

clocking digital information with a strobe, said parallel printer interface comprises a <u>data port interface and a status port interface wherein said data port interface comprises a plurality of wires and said status port interface comprises a plurality of wires, said strobe comprises one wire of said data port</u> interface; and

transferring digital information through said parallel printer interface..Iaddend..Iadd.

27. An system that transfers digital information through a parallel printer interface, comprising:

a parallel printer interface that comprises a <u>data port interface and a status port interface wherein said data port interface comprises a plurality of wires and said status port</u> interface comprises a plurality of wires; and

a strobe that comprises one wire of said data port interface, said strobe clocks digital information transferred through said parallel printer interface..Iaddend..Iadd.

30. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method that transfers digital information through a parallel printer interface, comprising:

clocking digital information with a strobe, said parallel printer interface comprises a <u>data port interface and a status port interface wherein said data port interface comprises a plurality of wires and said status port interface comprises a plurality of wires, said strobe comprises one wire of said data port</u> interface; and

transferring digital information through said parallel printer interface..Iaddend..Iadd.

33. A method that provides digital information with the ability to transfer through a parallel printer interface, comprising:

providing a parallel printer interface that comprises a <u>data port interface and a status port interface wherein said data port interface comprises a plurality of wires and said status port</u> interface comprises a plurality of wires; and

providing a strobe that comprises one wire of said data port interface; said strobe clocks digital information transferred through said parallel printer interface..Iaddend..Iadd.

36. A communications device that is external to a computer that transfers digital information through a parallel printer interface, comprising:

a digital interface circuit that comprises a data interface circuit

and a status transmit circuit, said digital interface circuit couples to a parallel printer interface, said parallel printer interface comprises a <u>data port interface that comprises a plurality of wires and a status port</u> interface that comprises a plurality of wires;

a strobe detect circuit coupled to said digital interface circuit that detects a strobe that comprises one wire of said data port interface; and

a control logic circuit coupled to said strobe detect circuit and said digital interface circuit, said control logic circuit controls the transferring of digital information through said parallel printer interface..Iaddend..Iadd.

39. A method that uses a communications device that is external to a computer to transfer digital information through a parallel printer interface, comprising:

clocking digital information with a strobe;

transferring digital information through a parallel printer interface coupled to a digital interface circuit, said digital interface circuit comprises a data interface circuit and a status transmit circuit, said parallel printer interface comprises a <u>data port interface that comprises a plurality of wires and a status port</u> interface that comprises a plurality of wires;

detecting said strobe with a strobe detect circuit coupled to said digital interface circuit, said strobe comprises one wire of said data port interface; and

controlling the transferring of said digital information through said parallel printer interface with a control logic circuit coupled to said strobe detect circuit and said digital interface circuit..Iaddend..Iadd.

42. A system that uses a communications device that is external to a computer that transfers digital information through a parallel printer interface, comprising:

a digital interface circuit that comprises a data interface circuit and a status transmit circuit, said digital interface circuit couples to a parallel printer interface, said parallel printer interface comprises a <u>data port interface that comprises a plurality of wires and a status port</u> interface that comprises a plurality of wires;

a strobe detect circuit coupled to said digital interface circuit that detects a strobe that comprises one wire of said data port interface; and

a control logic circuit coupled to said strobe detect circuit and said digital interface circuit, said control logic circuit controls the transferring of digital information through said parallel printer interface..Iaddend..Iadd.

45. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method that uses a communications device that is external to a computer to transfer digital information through a parallel printer interface, comprising:

clocking digital information with a strobe;

transferring digital information through a parallel printer interface coupled to a digital interface circuit, said digital interface circuit comprises a data interface circuit and a status transmit circuit, said parallel printer interface comprises a <u>data port interface that comprises a plurality of wires and a status port</u> interface that comprises a plurality of wires;

detecting said strobe with a strobe detect circuit coupled to said digital interface circuit, said strobe comprises one wire of said data port interface; and

controlling the transferring of said digital information through said parallel printer interface with a control logic circuit coupled to said strobe detect circuit and said digital interface circuit..Iaddend..Iadd.

48. A method that provides a communications device that is external to a computer with the ability to transfer digital information through a parallel printer interface, comprising:

providing a digital interface circuit that comprises a data interface circuit and a status transmit circuit, said digital interface circuit couples to a parallel printer interface, said parallel printer interface comprises a<u> data port interface that comprises a plurality of wires and a status port</u> interface that comprises a plurality of wires;

providing a strobe detect circuit coupled to said digital interface circuit that detects a strobe that comprises one wire of said data port interface; and

coupling a control logic circuit coupled to said strobe detect circuit and said digital interface circuit, said control logic circuit controls the transferring of digital information through said parallel printer interface..Iaddend..Iadd.

51. An apparatus that transfers digital information through parallel printer interface, comprising:

a parallel printer interface that comprises a <u>data port interface and a status port interface wherein said data port interface comprises a plurality of wires and said status port</u> interface comprises a plurality of wires; and

an embedded strobe that comprises one wire of said data port interface, said strobe clocks digital information transferred through said parallel printer interface..Iaddend..Iadd.

54. A method that transfers digital information through a parallel

printer interface, comprising:

clocking digital information with an embedded strobe, said parallel
printer interface comprises a <u>data port interface and a status port
interface wherein said data port interface comprises a plurality of
wires and said status port interface comprises a plurality of
wires, said strobe comprises one wire of said data port</u> interface;
and

transferring digital information through said parallel printer
interface..Iaddend..Iadd.

57. A system that transfers digital information through a parallel
printer interface, comprising:

a parallel printer interface that comprises a <u>data port interface
and a status port interface wherein said data port interface
comprises a plurality of wires and said status port</u> interface
comprises a plurality of wires; and

an embedded strobe that comprises one wire of said data port
interface, said strobe clocks digital information transferred
through said parallel printer interface..Iaddend..Iadd.

60. A program storage device readable by a machine, tangibly
embodying a program of instructions executable by the machine to
perform a method that transfers digital information through a
parallel printer interface, comprising:

clocking digital information with an embedded strobe, said parallel
printer interface comprises a <u>data port interface and a status port
interface wherein said data port interface comprises a plurality of
wires and said status port interface comprises a plurality of
wires, said strobe comprises one wire of said data port</u> interface;
and

transferring digital information through said parallel printer
interface..Iaddend..Iadd.

63. A method that provides digital information with the ability to
transfer through a parallel printer interface, comprising:

providing a parallel printer interface that comprises a <u>data port
interface and a status port interface wherein said data port
interface comprises a plurality of wires and said status port</u>
interface comprises a plurality of wires; and

providing an embedded strobe that comprises one wire of said data
port interface; said strobe clocks digital information transferred
through said parallel printer interface..Iaddend..Iadd.

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DOCUMENT-IDENTIFIER: US RE37118 E
TITLE: System for transmitting and receiving combination of compressed digital information and embedded strobe bit between computer and external device through parallel printer port of computer

Detailed Description Text (5):
Turning now to the drawings, FIG. 1 shows an external communications device 18, the hardware component of the invention, attached to the standard parallel printer port interface 4 of a personal computer 2. The personal or host computer 2 contains a microprocessor as the central processing unit (CPU), memory, video subsystem, and other subsystems. One subsystem common to most personal computers is the standard parallel printer port interface 4. The parallel printer interface as used herein means a connection, having a plurality of wires, between the personal computer 2 and some external communications device 18. Examples of the possible uses for this invention include network adapters, SCSI I/O adapters, high speed printer buffers, as well as the disclosed embodiment: a digital audio sound adapter. The parallel printer port 4, from a programming model, consists of 3 modules: the data port 6, the status port 8, and the control port 10. Each port is an eight bit data port connected to, and a part of, the parallel printer interface. In other words, a single bit corresponds on a one to one basis with one of the wires in the parallel printer interface. However, the IBM standard parallel printer interface does not use all the wires, leaving some wires (or bits) unused. Therefore, the eight bit data port 6 consists of the eight-wire data port lines 12 connecting to the external communications device 18. In a similar fashion, the five bit status port 8 consists of the five-wire status port lines 14 connecting to the external communications device 18; and the four bit control port 10 consists of the four-wire control port lines 16 connecting to the external communications device 18. These three ports and seventeen signal wires constitute the electrical portion of the standard parallel printer port.

Detailed Description Text (6):
One skilled in the art knows the functionality of the standard parallel printer port; therefore, FIG. 2 briefly represents the register map of the programming model (of the hardware) for accessing a standard parallel printer port using an IBM compatible personal computer. The standard parallel printer port uses the following three adjacent register addresses (references are to FIG. 1): (1) the data port 6; the status port 8; and the control port 10. As shown by FIG. 2, the data port is either an eight bit data

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L5: Entry 4 of 45              File: USPT              Oct 30, 2001

DOCUMENT-IDENTIFIER: US 6311327 B1
TITLE: Method and apparatus for analyzing software in a
language-independent manner

Detailed Description Text (32):
The communications and control circuit 120 is illustrated in
greater detail in FIG. 6. The interface between the probe chassis
20 and the host 40 consists of a standard Ethernet communication
channel. The Ethernet transmission status signals are routed
through a communications port 130 to a status port 132. The
communications port 130 is preferably implemented with a Motorola
MC68340 control processor.

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L5: Entry 1 of 45               File: USPT               Oct 29, 2002


DOCUMENT-IDENTIFIER: US 6473792 B1
TITLE: Method of simulating broadband internet content downloads


Detailed Description Text (16):
Communication between microcontroller and the host personal
computer, or other display/processing system is accomplished via a
status port having corresponding signal lines and a data port
having a corresponding signal line 88. Depending on the particular
microcontroller, the data and status ports may be on-board or
implemented with an external I/O device. In the exemplary
embodiment, the data and status ports are 8-bit registers and the
signal lines 86, 88 each contain corresponding eight individual
signal paths. The status signal lines 86 serve to identify the
current transfer operation performed by the microcontroller 58, and
the data signal lines 88 transfer the data from the microcontroller
58 to the host computer. The data and status information from the
corresponding ports is decoded by the address decode circuitry 68
and presented to the bus 42 for transfer to the host computer.

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L5: Entry 2 of 45               File: USPT               Oct 8, 2002

DOCUMENT-IDENTIFIER: US 6463469 B1
TITLE: Computer-based RDS/MBS receiver system for use with radio
broadcast signal

Detailed Description Text (16):
Communication between microcontroller and the host personal
computer, or other display/processing system is accomplished via a
status port having corresponding signal lines and a data port
having a corresponding signal line 88. Depending on the particular
microcontroller, the data and status ports may be on-board or
implemented with an external I/O device. In the exemplary
embodiment, the data and status ports are 8-bit registers and the
signal lines 86, 88 each contain corresponding eight individual
signal paths. The status signal lines 86 serve to identify the
current transfer operation performed by the microcontroller 58, and
the data signal lines 88 transfer the data from the microcontroller
58 to the host computer. The data and status information from the
corresponding ports is decoded by the address decode circuitry 68
and presented to the bus 42 for transfer to the host computer.

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L3: Entry 14 of 17　　　　　　File: USPT　　　　　May 12, 1998

DOCUMENT-IDENTIFIER: US 5752077 A
TITLE: Data processing system having a <u>multi-function input/output port</u> with individual pull-up and pull-down control

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L3: Entry 17 of 17       File: USPT       Sep 14, 1982

DOCUMENT-IDENTIFIER: US 4349870 A
TITLE: Microcomputer with programmable <u>multi-function port</u>